

**IN THE CLAIMS**

**Please amend the claims as follows:**

Claim 1 (Currently Amended): A nuclide transmutation device comprising:

a structure body including a hydrogen absorbing material which is at least one of a hydrogen absorbing metal [[or]] and a hydrogen absorbing alloy, and which comprises a low work function material having a work function equal to or less than 3 eV;

an absorption part in which one surface of said structure body is exposed to a deuterium gas at a pressure;

a desorption part in which another surface of said structure body is exposed to the deuterium gas at a pressure lower than the pressure in said absorption part, said desorption part and said absorption part being positioned to form a closed space sealed by said structure body;

a high pressurization device configured to produce the pressure in said absorption part, said high pressurization device including a deuterium supply device configured to supply the deuterium gas to said absorbing part;

a low pressurization device configured to reduce the pressure in said desorption part, said low pressurization device including an exhaust gas device configured to evacuate said ~~desorption~~ desorption part; [[and]]

a transmutation material binding device configured to bind a material that undergoes nuclide transmutation on said one surface of said structure body; and

a heating device that controls the temperature of the structure body,

wherein the high pressurization device and the low pressurization device are configured to provide a flow of the deuterium that penetrates through the structure body and the material bound on the structure body.

Claims 2-3 (Canceled)

Claim 4 (Previously Presented): A nuclide transmutation device according to claim 1, wherein said transmutation material binding device comprises a transmutation material lamination device configured to laminate said material that undergoes nuclide transmutation on said one surface of said structure body.

Claim 5 (Previously Presented): A nuclide transmutation device according to claim 1, wherein said transmutation material binding device includes a transmutation material supply device configured to supply said material that undergoes nuclide transmutation to said absorption part, and expose said one surface of said structure body to a gas or liquid that includes said material that undergoes the nuclide transmutation.

Claim 6 (Currently Amended): A nuclide transmutation device according to claim 1, wherein said structure body includes:

a base material including a hydrogen absorbing metal or a hydrogen absorbing alloy;

a mixed layer formed on said base material and ~~comprises a~~ comprised of at least one of the hydrogen absorbing metal ~~or a~~ and the hydrogen absorbing alloy, and a material ~~having~~ a comprised of the low work function ~~that allows emission of electrons equal to or less than 3 eV; and~~

a surface layer formed on said mixed layer and ~~comprises a~~ comprised of at least one of the hydrogen absorbing metal ~~or a~~ and the hydrogen absorbing alloy.

Claims 7-9 (Canceled)

Claim 10 (Previously Presented): A nuclide transmutation device according to claim 1, wherein the transmutation material includes at least one of Cs, C, Sr, and Na.

Claim 11 (Canceled)

Claim 12 (Previously Presented): A nuclide transmutation device according to claim 1, wherein the structure body comprises a substrate including Pd, a mixed layer formed on

the substrate and including Pd and a material having a work function equal to or less than 3 eV, and a layer formed on the mixed layer and including Pd.

Claim 13 (Previously Presented): A nuclide transmutation device according to claim 12, wherein the mixed layer comprises layers including CaO and layers including Pd that are laminated alternately.

Claim 14 (Previously Presented): A nuclide transmutation device according to claim 1, wherein the absorption part comprises an absorption chamber, the desorption part comprises a radiation chamber, the high pressurization device comprises a deuterium tank configured to supply the deuterium gas into the absorption chamber, and the low pressurization device comprises a vacuum pump configured to maintain an interior of the radiation chamber in a vacuum state.

Claim 15 (Previously Presented): A nuclide transmutation device according to claim 1, wherein said structure body comprises palladium or a palladium alloy.

Claim 16 (Currently Amended): A nuclide transmutation device comprising:  
a structure body which includes a hydrogen absorbing material which is at least one of a hydrogen absorbing metal [[or]] and a hydrogen absorbing alloy, and which comprises a low work function material having a work function equal to or less than 3 eV, the structure body having ~~and has~~ one surface on which a material that undergoes nuclide transmutation is provided;

an absorption part in which said one surface of said structure body is exposed to a deuterium gas at a pressure;

a desorption part in which another surface of said structure body is exposed to the deuterium gas at a pressure lower than the pressure in said absorption part, said desorption part and said absorption part being positioned to form a closed space sealed by said structure body;

a high pressurization device configured to produce the pressure in said absorption part, said high pressurization device including a deuterium supply device configured to supply the deuterium gas to said absorbing part; [[and]]

a low pressurization device configured to reduce the pressure in said desorption part, said low pressurization device including an exhaust gas device configured to evacuate said desorption part, and

a heating device that controls the temperature of the structure body,

wherein the high pressurization device and the low pressurization device are configured to provide a flow of the deuterium that penetrates through the structure body and the material provided on the structure body.